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VOL. XIX.—No. 4.

TORONTO, MONTREAL — APRIL, 1906 — WINNIPEG, VANCOUVER

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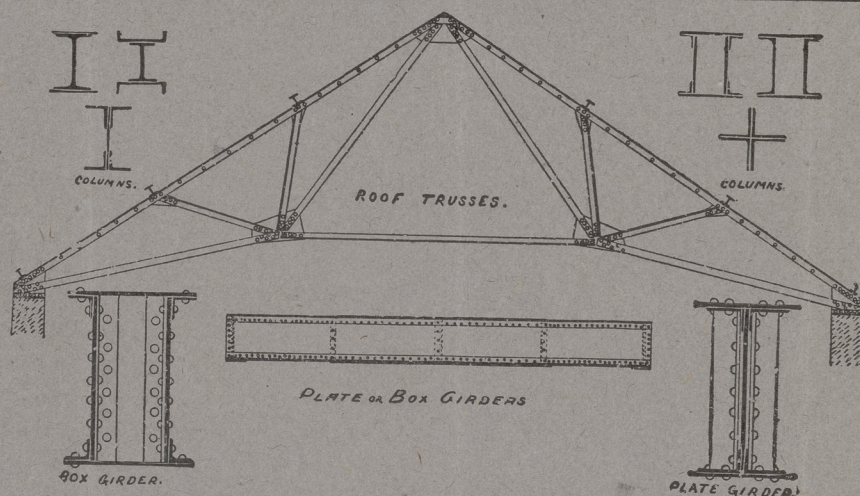
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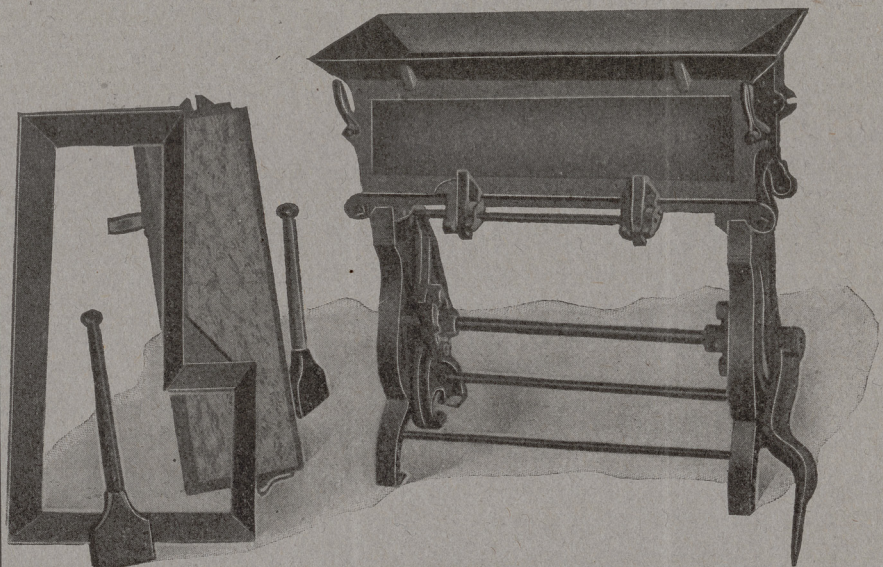
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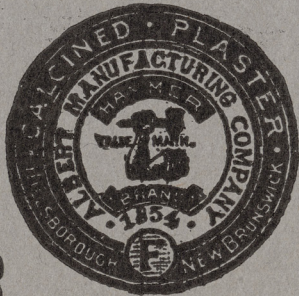
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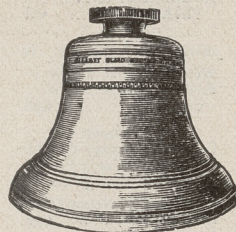
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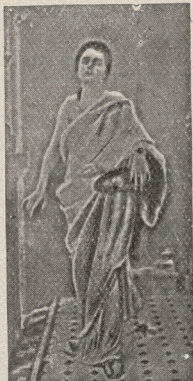
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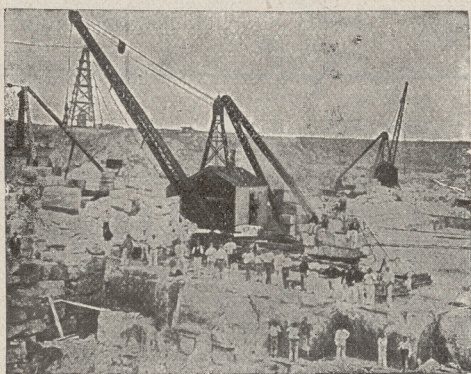
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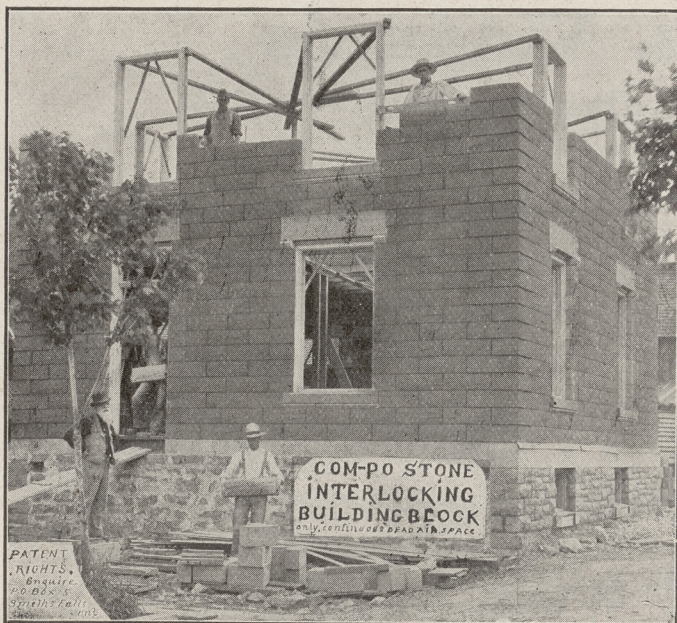
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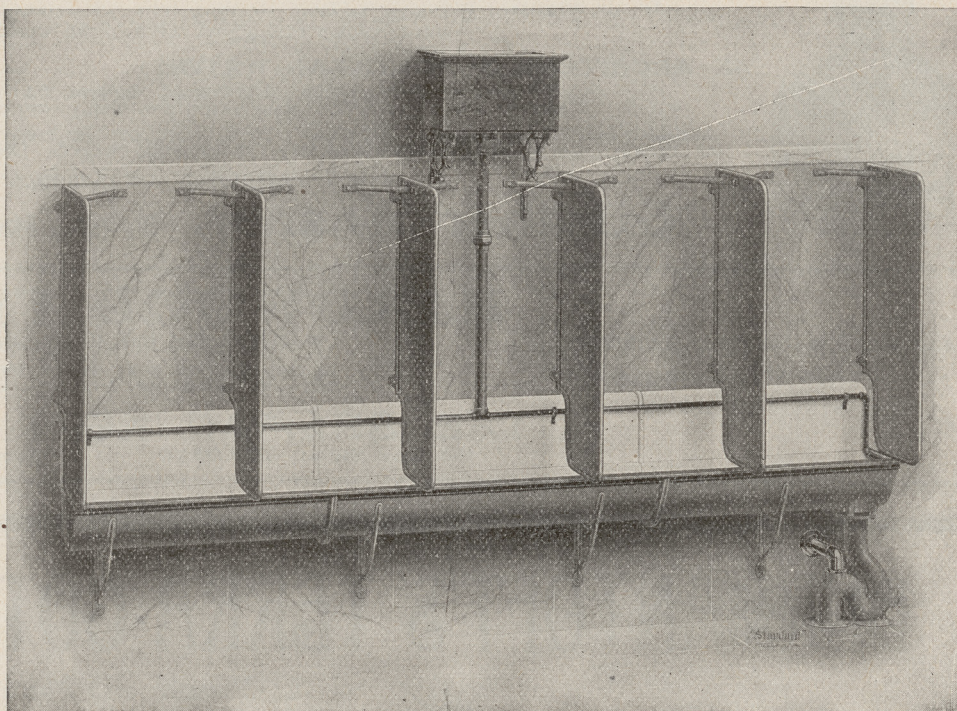
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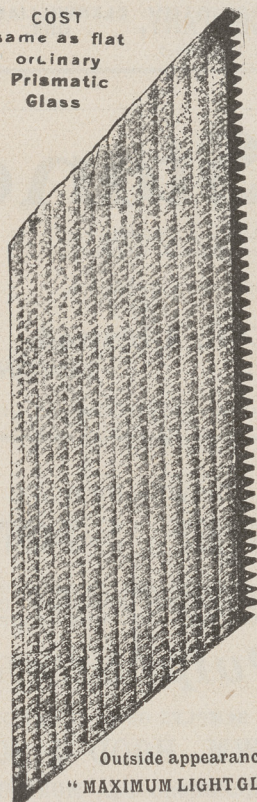
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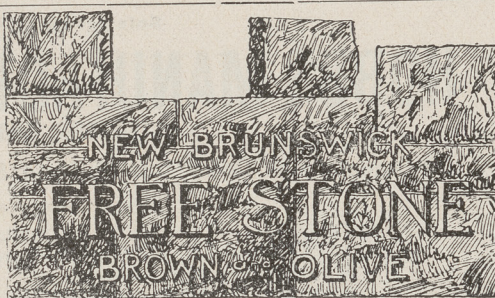
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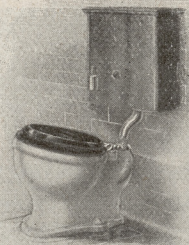
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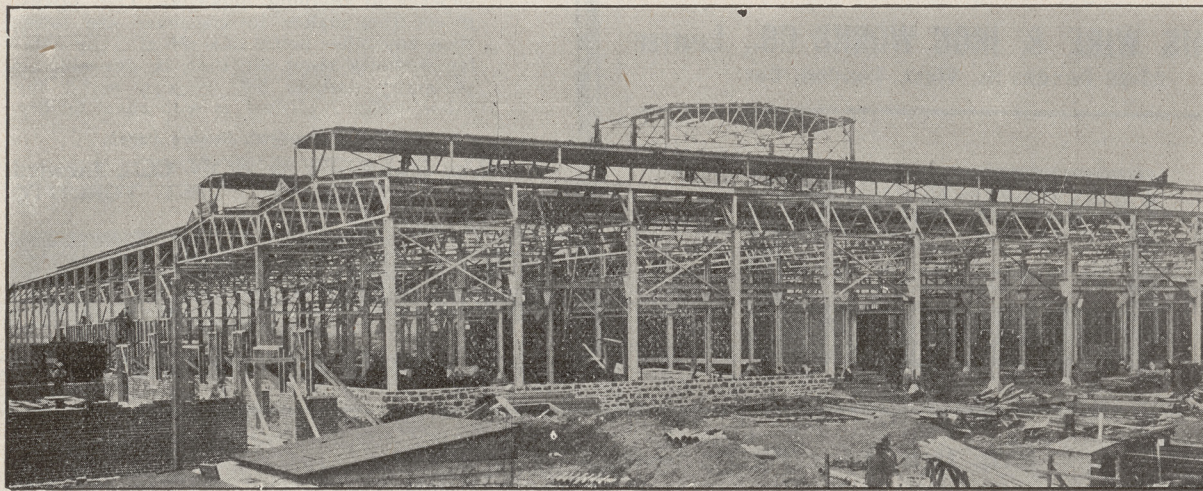
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W. A. LANGTON

EDITOR.

OFFICES : CONFEDERATION LIFE BUILDING, TORONTO, CANADA.

VOL XIX.—No. 220.

APRIL, 1906.

ILLUSTRATIONS ON SHEETS.

The Molsons Bank, Toronto Branch.—Messrs. Finley & Spence, Architects, Montreal.
The Home Bank of Canada, Toronto.—Mr. Beaumont Jarvis, Architect, Toronto.
The Linton Apartments, Montreal.—Messrs. Finley & Spence, Architects, Montreal.
Canadian Architect and Builder Competition, design by Mr. Victor G. Steer, Toronto; Awarded Third Prize.

ADDITIONAL ILLUSTRATIONS IN ARCHITECTS' EDITION.

Cathedral Church of St. Boniface, St. Boniface, Manitoba.—Messrs. Marchand & Haskell, Architects, Montreal.
Westminster Palace, from the Victoria Embankment, from a Photograph by Mr. J. P. Hodgins, Toronto.

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REMOVAL NOTICE.

The Montreal offices of this paper will, on May 1st, be removed from the Alliance Building to Room B 34, Board of Trade Building, St Sacrament street, where our friends and business acquaintances will always be welcome. The telephone number will remain unchanged, Main 2299.

The Illuminating Engineer.

A new Person has been added to the complexity of building affairs. The Illuminating Engineer has arisen; with a Society in New York, The Illuminating Engineering Society, constituted last January for "the advancement and dissemination of theoretical and practical knowledge of the Science and Art of Illumination"; and a technical journal, The Illuminating Engineer, also of New York, of which Vol 1 No 1 has just reached us.

The Sprinkler Tank Danger.

The fall of the tank in Montreal which caused the death of Miss Ross was the second disaster of the kind in Montreal within ten days. So we learn from a resolution of the Montreal Builders' Exchange urging special inspection of these erections. The first accident attracted little attention. We wait for something dreadful to happen before we are aroused; even though we have suspected danger before. It is about a year since it was suggested in this journal that trestles of exposed steel were not a safe form of support for these tanks, in view of the danger of collapse in case of fire, endangering the lives of firemen. Now is the time to speak of that again; a brick tower is the proper form of support. "If we must have these elevated ornaments", as the Montreal Builders' resolution pathetically says, let them be made both safe and decent looking.

The proposal in the Builders' resolution has three heads :—(a), the appointment of a special staff at once to make a thorough inspection of the support of tanks already existing—over a hundred of them; (b), the

control of future erections by making permits necessary; (c), subsequent periodical inspection.

The moral of the occasion, however, is that new departures in building inspection, (as in insurance or other inspection), should proceed not from disaster but from test cases arising out of zealous insistence by inspectors on the intention of their office until the law is either found or made to support them.

The Steel Frame Building in an Earthquake.

As far as we learn from the newspapers at the time of writing, the steel frame buildings in San Francisco were not damaged beyond repair, viewed from outside. Nothing definite has been said about the interior; nothing that would convey an idea whether the floor arching remained in place, so that there was no danger to the lives of occupants of the building. The fire must of done much to obliterate the records of the earthquake, but no doubt there will be a careful investigation of all obtainable evidence in this matter, for apart from its serious interest to other cities, the future of San Francisco as a city of great buildings, which is almost the equivalent of a great city, will depend upon the justification of the steel frame by this test—the first, or the first severe test, that it has been subjected to.

It is probable that the rebuilding of San Francisco will show a further development in steel frame design; a development that ought to have taken place before now. The weak point of the skyscraper, in both design and construction, is the continuous surface of the outside shell—a rigid envelope to a slightly flexible frame. If the recommendation of a steel frame for an earthquake belt is the capacity of the steel to endure racking, it should be mated with a system of protection that can be moved by the racking without breaking up. This is only to be managed by building the storey walls separate not only from each other, but from the vertical and horizontal frame protection. It means building and protecting the steel frame first, and then inserting the storey walls. In earthquake regions, at any rate, the storey walls should not be bonded with the frame

protection. This means or should mean a difference of plane, making the steel frame protection a veritable framing for the fitting. Building is not thus made more difficult but rather easier. As to the strain on the designer, universal experience goes to show that designing is hardest when one is on the wrong tack, and unquestionably this is the right tack for steel frame design.

The International Secretary.

At the end of 1905 a notification was sent to the granite manufacturers of Toronto by the local union ordering that all granite cutting in Toronto must be done by union men. The McIntosh-Gullett Company declined to obey this order. Its men were called out on strike and were replaced by non-union men. Mr. J. McIntosh, the president of the McIntosh-Gullett Company, is manager of the Stanstead Granite Company at Beebe Plain, Quebec. In this capacity he was notified that, if he did not settle the Toronto strike the Stanstead employees would be called out. He replied to the following effect:—(a) that he did not control the Toronto concern and was not in a position promise for it; (b) that, as manager of the Stanstead Company, he could and would let work it had in hand for the Toronto Company stand until the Toronto strike was settled; (c) that the Stanstead Company had a contract with the union that did not expire until 1908. He even sent the secretary of the Stanstead Company to the secretary of the International Union with the proof that the two companies, with the exception of one or two shareholders who were interested in both, were independent concerns. The international secretary was unmoved; the threatened strike was “the best weapon they had and they intended using it.” And they did; the Stanstead men were ordered out.

The *Montreal Gazette*, from which we get our facts, asks pertinently in what respect this united action of the Stanstead and Toronto unions differs from the plumbers' combine in Toronto that was so severely treated by the law. The Toronto plumbers combined, according to their contention, merely for purpose of giving a good standing to the plumbing business and to plumbing work. Incidentally they got high profits. Incidentally also, (to take a very broad view), the combination of the Stanstead and Toronto unions extorts from a Toronto firm certain conditions of employment held to be beneficial to the Toronto union. To do so involves the violation of a contract and the disablement of the Stanstead Company for fulfilling contracts which it has undertaken and for which it may be held liable. The *Montreal Gazette* excuses the inaction of the legal authorities in this case on the ground that “the union is, legally, a mere wraith upon which no man may place his hand.” How to prove the facts is a question, when “the real centre, the mainspring of the act is a foreigner, an alien, outside of the jurisdiction of the Canadian courts.” This foreigner supplies the funds which maintain the strikers in their position, legal or illegal. Invested Canadian capital is at his mercy; a kind of mercy which tempers justice on the wrong side, introducing into this country the new doctrine that contracts are not binding if inconvenient.

The situation is not tolerable. It is time the unions

ceased to be “a wraith” and became incorporated. Then we might get our fellow citizens to respect our (and their) laws as much as the mandate of a foreign potentate, for their funds would be answerable in fines and damages for breaches of law and contract.

The Toronto Art Museum.

An Art Museum for Toronto is at last in sight. A committee of gentlemen has been at work for some years, creating interest in the project and getting subscriptions; and it is announced now that a building will be available soon for the collections which they hope to acquire. Membership to the Museum is to be of four classes—Benefactors, Founders, Life and Annual members. Benefactors are donors of \$5,000 and upwards; Founders are donors of \$1,000. These will have their names inscribed on the walls of the Art Museum. The payment of \$250 gives Life membership. The Annual membership fee will be \$10 a year for laymen and \$5 a year for Art students and members of any recognized Art body. A member of any class will be entitled to admission without charge, for himself and a family of five, to the museum buildings and all art exhibitions held therein.

The first public effort of the Museum is an exhibition of pictures by painters of the Glasgow School, which have been procured by the Provisional Council of the Museum in conjunction with the Ontario Society of Artists. This exhibition is now going on. The pictures came to Toronto from the Albright Art Museum of Buffalo, where they were exhibited for sometime, having been procured by Mr. Charles M. Kurtz, Director of the Albright Museum, for exhibition there and in other galleries in the United States.

The exhibition is one of great interest. The Glasgow School has been so called from a temperamental similarity in the work of the painters that is quite marked in spite of differences of aim and education. The one point the artists have had in common as an educational influence has been the opportunity of study in one of the finest galleries in Europe; into which came, during their period of youthful effort, a regular stream of works by Delacroix, Corot, Monticelli, Daubigny, Rousseau, Diaz and the Marises; loaned by wealthy Glasgow merchants who, having apparently that same sympathy with French art which is expressed in Scotch architecture, bought chiefly works of the Romantic School which had then reached recognition in France. The gathering of artists, upon the arrival at the gallery of a new picture by one of these artists, was described by Professor Mavor, of the University of Toronto, chairman of the joint committee of arrangements for this exhibition, in his address in opening the exhibition. Professor Mavor, who is well known as an experienced Art critic, passed his own youth in Glasgow and was at that time intimate with the Glasgow painters; so that he spoke from personal knowledge.

The inference in favor of the establishment of an Art Museum is obvious; and we recommend our Toronto readers to take this opportunity of seeing a really good exhibition of pictures, that they may taste the enjoyment and advantage of it, and see for themselves whether membership in the Toronto Art Museum is not a thing to be desired.

DECORATIVE PAINTING.

This subject—carried over in continuation of last month's notice of the Annual Exhibition of the Ontario Society of Artists—has the special interest that there is likely to be some decorative wall painting done soon in the entrance halls of the Parliament Buildings in Toronto.

Any arrangement of form or colour is decorative, if it is only an arrangement; indeed there is some excuse for associating particularly with decoration a certain emptiness of idea, inasmuch as there is such a thing as decoration which consists in form and nothing else. For this reason no doubt the Ontario painters of decorative studies in landscape simplify their work as they do, excluding everything that may distract the eye from appreciation of the general arrangement of colour form which is the primary motive of the study.

It is this latter point—making decorative handling the equivalent of omission—that we should like to discuss with them. There is such a thing as leaving out because one is not able to put in and producing decorative pictures as a measure of prudence; but that is not a phase of the matter that concerns us now. A chief example is in the work of a painter who has demonstrated both in easel work and a large way, many times, his capacity for decorative work of more than one kind. It is an idea adopted by choice, not a necessity of lack of skill; and this article is a controversy rather than a criticism. The example in question was a pair of Canadian landscapes—the one farm land with barns in the middle distance; the other a road retreating into the middle of the canvas, viewed from a bridge in the foreground, with houses on the left and a rail fence, trees etc. on the right. These paintings were framed heavily and simply in pine, stained brown, which showed them to be excellently adapted to fill large panels, over a mantel-piece or otherwise. On first sight, in taking a hasty look round the gallery to see what was best worth looking at, the writer was struck forcibly by these paintings and thought—"at last the poet of everyday Canadian scene!" But a return to them brought dissatisfaction; and this not that what was done was not good, but that there was not enough done to give content. From whatever point of view—distant or near—definition was incomplete. Something like this may be the appearance of landscape to the short sighted man; but we consider normal sight to be the standard, and the short sighted man himself supports us in that position to the extent of wearing glasses. Now on a clear, early summer day, such as these paintings seem to represent, anything that is seen in full daylight is seen distinctly; too distinctly it is said; but if that is a characteristic of the atmosphere in Canada, a Canadian country road can only look like itself when its details are thus defined.

It is at this point in the argument that the camera usually gets some uncomplimentary mention, but it is quite out of place. There is no proposal for complete representation; it is proposed only that so far as it goes representation should be distinct.

When a recent pair of Sunlight Soap posters were on the hoardings, we had an excellent representation of little girls making child's play of wash day with a lace curtain and a tub of water in a meadow. What went to make it up? Nothing but the figures, outlined and washed with local colour. No sky, no ground;

nothing else but the tub and curtain. Accurate and expressive outline-drawing of the simplest kind told the whole story. I should not myself have noticed how little there was in it but for hearing a question asked—why those children looked all right when they were standing on nothing.

If, in the lower walk of decorative art, it is possible to present a large range of idea by the selection of the poetic facts, and their definite expression, it cannot be the distinguishing mark of greater art to suggest vaguely and leave definiteness of idea to the mind of the beholder.

So far we have been speaking of the fantastic vagueness that would make nocturnes out of daylight and people a land of milky atmosphere with forms of two dimensions.

Perhaps the real nocturne—the whole family of twilight effects that exist in nature and should have pictorial existence as well—will be claimed by the decorator as peculiarly his own. Perhaps; but not, one would say, in the field of serious effort.

If one thinks of all the great decorative painting one has seen, with a view to discovering in it what differentiates it from the *picture*:—the one quality that runs through all seems to be an avoidance of occasional or unusual effects of light, in favour of an academic lighting that attracts no attention to itself but serves merely to define the forms that are the subject matter of the composition. Even in pictures, when the theme is great, it is an impertinence to make the representation a vehicle for atmospheric effect. Therefore in decoration particularly, where, from Dutch tiles up, the principal concern is with form, and there are limits in other directions, all superabundance or dimness of light is discarded in favour of a clear, calm, almost shadowless illumination in which every form is distinctly seen.

BOOKS

CODE OF BUILDING LAWS. BY ALCIDE CHAUSSE, ARCHITECT. PUBLISHED BY THE GUERTIN PRINTING CO., MONTREAL. PRICE \$2.50.—As Chief Inspector of the Bureau of Building Inspection of Montreal, Mr. Chausse has given his chief attention to the Montreal Building Laws, which are clearly set forth in paragraphs under title headings, and these headings appear in the index so that the point conveyed by each paragraph may be easily looked up.

But the building laws of Montreal are not the only laws which affect building matters in Montreal. There are Provincial regulations respecting public buildings and industrial establishments, which Mr. Chausse has extracted for his book; and here he touches not only architects and builders and building owners in Montreal but a general public, throughout the Province of Quebec, which is engaged in industrial pursuits.

There is a section called *Extracts from the Code of Lower Canada* which gives common law in building matters. An example will show the kind of decision made:—"When the different storeys of a house belong to different proprietors, if their titles do not regulate the mode of repairing and building it must be done as follows: All the proprietors contribute to the main walls and the roof, each in proportion to the value of the storey which belongs to him; the proprietor of the first storey makes the stairs which lead to it; the proprietor of the second storey makes the stairs which lead from the first to his, and so on."

The book concludes with a dictionary of building terms and some tables and practical information useful for architects, builders and superintendents. Some of these are new or unusual; some, like the list of books

recommended for architects and builders, appear to be original compilations.

With the exception of the tables, the matter of the book, index and all, is given first in English and afterwards, in a second part, in French.

THE BUSINESS OF CONTRACTING, BY EARNEST McCULLOUGH. PUBLISHED BY THE TECHNICAL BOOK AGENCY, P.O. Box 691, CHICAGO. PRICE 50 CTS.—This is a small octavo paper book of 45 pages. The reviewer has read every word of it with interest and even fascination. It is written by one who knows his subject from personal experience. He appears to be an engineer who has been engaged in carrying out contractor's work. There is much practical advice about the management of a contractor's office and works. There is everything in method and much in machinery; but in the end it all comes down to men. The management of men is the contractor's business; and the interest of this book, and its value to contractors, lies in there being not only a full account of method but also full recognition that it can only be carried out by others; and the burden of the book is therefore the handling of men. It is a book that every contractor ought to read.

HOUSE HINTS FOR THOSE WHO BUY, IMPROVE OR RENT BY C. E. SCHERMERHORN. PUBLISHED BY THE HOUSE HINTS PUBLISHING CO., PHILADELPHIA. PAPER. PRICE 50 CTS.—There is a great deal of information and opinion about house building and furnishing packed in the fifty pages of this book. It is not explanatory so much as sententious. Brief opinions upon every point are given, mainly from the practical point of view, with reference to comfort and durability, but also from the point of view of taste. Each subject considered is paragraphed with a heading. The order of arrangement is that of the progress of a house from SITE to DRAPERIES, but the first page consists of an index in alphabetical order of the section headings, so that an opinion upon any one point can be readily found. The author's description of his work as "an earnest attempt to enlighten the house owning and acquiring public to a general correct knowledge of practical home building and equipping" is a very good account of its purpose. We have described his method; an extract given elsewhere will show the style of the book.

TRUSSED ROOFS AND ROOF TRUSSES BY F. E. KIDDER. NEW YORK. WILLIAM T. COMSTOCK. LARGE 8VO.; 292 PP.; 306 ILLUSTRATIONS. PRICE \$3.00.—Mr. Kidder's works are so well known that they need no commendation and little description. Those who already possess the first two parts of his series on Building Construction and Superintendence will understand the nature of this volume, which constitutes Part III.

The best possible description of the book is in the preface written by the author. He says, "the aim has been to describe nearly every type of roof construction commonly met with in buildings such as architects have occasion to design, to point out the advantages of the different types of wooden and steel trusses for different spans and building requirements and to explain the process of computing the loads, drawing the stress diagram and proportioning the members and joints to the stresses. Special pains have been taken to make the mechanical principles involved as plain as possible and to describe the method of obtaining the stress so that any intelligent person can apply them and that without violating any scientific principle".

What an architect principally likes to know is what has been done and it has been Mr. Kidder's method to show this, as the main subject of his discourse, with a running commentary upon its reasonableness and appearance. This is the method of the present work; enlightened, as he describes in the preface, by analyses of the different types and by illustrations, showing both general form and detailed construction. Copying trusses, except perhaps in the method of framing, is not good practice nor the intention of the author. Each truss must have its own computation. The last

two chapters are concerned with this:—the one with the question of loads and their computation, the other with graphic statics and its application in making stress diagrams. This is the essential attainment for truss designing. The author thinks that any person of average intelligence can master the principles of graphic statics if he makes the necessary effort, and, these once mastered, the stresses in ordinary types of trusses can be easily and quickly determined.

CREMATORIA IN GREAT BRITAIN AND ABROAD BY ALBERT C. FREEMAN. LONDON, ST. BRIDE'S PRESS, 24 BRIDE LANE, FLEET ST., E.C.—The modern revival of cremation has a sanitary motive. According to Darwin's estimate, earthworms in one acre of ground will cast up 15 tons weight in a single year. Pasteur, acting on this hint, experimented with worms from earth in which animals that died of splenic fever had been buried and found that the earth they carried and earth which he obtained otherwise from beneath the surface were both full of the germs of the disease, and he was able to infect animals fatally from both specimens. That in brief is the case for cremation. Earth does not purify. Noxious gases rise from the soil and water that percolates through the soil is contaminated, when there is mere decay. Much more is there danger when the bacilli of specific disease are buried with the body. There is no certainty as to when the germ will die, if buried; cremation, on the other hand, surely destroys it. Herein is the reasonableness of the practice, and, however little we may like it, this we must admit.

Mr. Freeman's work is a study of the buildings that have been erected for the purpose since 1872, when a modern scientific process was made the subject of experiment in Italy and the results exhibited at the Vienna Exhibition in 1873. Mr. Andrew Taylor's crematorium in the Mount Royal Cemetery at Montreal comes in for a brief description. The illustrated examples are English, European and American. The English, to an English eye, contrive to get most of the usual feeling we are accustomed to in buildings connected with the disposal of the dead.

The crucial question is the method of obtaining rapid and complete incineration; consuming all gases and leaving nothing but the ashes of the body; and the most valuable part of Mr. Freeman's work is the description of the methods employed in the different crematoria he describes.

The coffin is generally placed on a catafalque in a chapel adjoining the incinerating chamber and, at the conclusion of the burial service, moved by mechanical means, without handling, through a door in the separating wall, into the furnace, where a heat of from 1500° to 2000° is obtained.

The painful part of the process is the long waiting upon the process of incineration; and not less unsatisfactory is the question that then arises as to the disposal of the ashes. The resulting ashes are remains not only of the body but of the coffin as well. To contain them a box urn measuring 8 in. by 8 in. by 16 in. is said to be necessary. The question is, what to do with it?

The practice at present is to build a columbarium, in connection with the crematorium, and there dispose of the urns in niches, as close together as possible, to make all possible use of the space, and holding "as many as ten urns in one niche." The price is given of the niches in the Fresh Ponds Crematory, New York;—"in the upper row all around the building \$10 each, in the next row \$15, and then \$20 and \$25.

The suggestion of such a building is of gloom unenlightened by sentiment. But how else to bestow the ashes? One would like to revert to the old order of things and bury the urn.

NAME.

"Well, the congregation have become so fashionable that they won't stand for the old name any longer. They want something modern."

"What will they call it?"

"I don't know, but I should think the Church of the Holy Limit would be about right."—Puck.

OUR ILLUSTRATIONS.

THE MOLSONS BANK, TORONTO BRANCH. MESSRS. FINLEY AND SPENCE, ARCHITECTS, MONTREAL.

This building is to be begun in May, on the corner of Bay Street and the lane which continues Pearl Street. The latter is at present a goods lane and in the drawing is gated off as if it is to continue to be a private road. The corner entrance is therefore without the usual *raison d'être* of an approach from two directions and is evidently adopted only to face the point of principal view, which will be the corner of King and Bay Streets, almost exactly on the axial line of the entrance and the dome over it.

The lane side, which is pierced with windows to light the clerks' desks is kept quiet; ornament is concentrated on the entrance and front, where is the manager's room. There is to be a light well one storey deep in the centre of the building. The public space is below this and clerks' desks on the north side get their main light from above.

The upper storey is a residence.

THE HOME BANK OF CANADA, TORONTO. MR. BEAUMONT JARVIS, ARCHITECT, TORONTO.

For a single frontage like that of the Home Bank the greatest distinction is to be obtained from columns. The banks appear to have come to the fortunate decision that low buildings devoted principally to their own purposes make the proper type for a bank building. As they are surrounded by much taller buildings, the scale which is given by a single order of two or three storey height is desirable to enable them to hold their own in the street. The view of the Home Bank, or of the Yonge St. Branch of the Bank of Commerce, (illustrated in our February number), as one approaches them on the same side of the road, is striking, and adds much to the fineness of the street. This however determines the principle rather than the solution of it. One cannot help hankering after something founded on the proportions of the orders but not following them altogether in detail.

Here is a suggestion which at any rate opens up a way of some individual variation and will improve our universal rendering of the orders with an empty pediment. There is no Greek precedent for this. It was never intended that an order should be crowned by a plain pediment without sculpture. The pediment form itself is severe enough without being made a ground solely for the display of rectangular dentils and console ends. Sculpture in some form is demanded for the sake of its grace of line. And there is plenty of motive for its display in bank heraldry and titles, without it being necessary to revert to the affairs of the Lapithæ and Centaurs and other persons in whom we are but coldly interested, and who, not having the expense of clothes, had dealings with no bank but that on which the wild thyme grows.

The Home Bank is interesting as being of reinforced concrete throughout.

THE LINTON APARTMENTS, MONTREAL. MESSRS. FINLEY & SPENCE, ARCHITECTS, MONTREAL.

There is no mistaking the apartment house character of this building. The sparkling effect of the drawing will find expression, in the executed work, in the variegated surface of brick and stone, got by using quoins for every angle and by carrying through the head and sill courses. The wrought iron and glass at the

entrance contribute to the appearance of elegant comfort.

The building is said to be without light shafts; for which purpose it appears, from the perspective, to have an Ξ plan, which is the main motive of the design. The floors and partitions are of terra cotta; wood is used only for flooring, doors and trimming. Other features worth noting, in the description of the building in one of the Montreal newspapers, are the abundance of bathrooms; utilization of the basement for a heating and ventilating plant, as also for fire-proof store rooms for tenants' property and a garage for their motors; and cold storage closets in the pantries, so that no ice need be brought into the building.

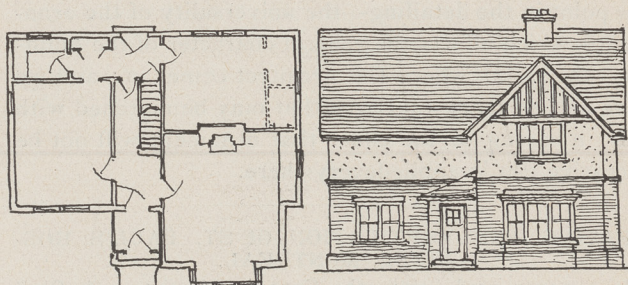
CANADIAN ARCHITECT AND BUILDER COMPETITION. DESIGN BY MR. VICTOR G. STEER, TORONTO; AWARDED THIRD PRIZE.

It is as a straight forward building plan, and at the same time convenient and pleasing in its arrangement, that this plan gets its position. It might be improved in execution by setting the east wall of the dining room two or three feet further out. There is no more walling involved and that room, which is very comfortably placed and will make a good living room, should have sufficient space.

The parlour, which stands between the dining room and the north wind, ought to have little window if any in the north wall; certainly not a mullioned sash-window as shown. A small casement, and high because of being in a wall close to the line of the lot, would have been more suitable for the problem before us, in which 40 feet was the specified width of the lot; but in any case, (supposing the adoption of the plan for actual building on another lot), it is not so much light that is wanted, when there is so large a window at the end, as a cross draught in summer. For this purpose the small window might be well repeated in the rooms above. It should be remembered also that a room looks best when the main light comes from one direction only.

It would improve the exterior somewhat if the large roof were carried past the ridge of the small one, for a few feet, and finished with a small gable.

The truly satisfactory condition for the exterior would of course be to find a reason for making a projection on the north wall equal to the width of the dining room wing, so that the main roof would have to run through and the parlour wing become a projection upon it.



The reason might easily be found in a larger kitchen, and more interesting parlour, and space for closets for the bedrooms above.

These comments are made, not in criticism of Mr. Steer's plan, which fulfilled very well the conditions of the competition, but because one purpose of these competitions is to bring suggestions for suitable plans before those of our readers who build for themselves

in the smaller towns ; and the plan before us seems well adapted for a little expansion.

CATHEDRAL CHURCH OF ST. BONIFACE, ST. BONIEACE,
MANITOBA.—MESSRS. MARCHAND & HASKELL,
ARCHITECTS, MONTREAL.

Here is a design well worth attentive scrutiny, both for the interesting working out of the style in detail and, especially, for the dignity and nobility of the total result. The front—especially the entrance with its expanse of steps and the great seated angels at each end—has the true Catholic feeling, of the church of which the visible existence in the world is a real part of the order of things.

In plan there is evidently a nave and passage-aisles. The designers have profited by modern development in that direction. One could wish they had abandoned antiquity also in the truncation of the tower at the dome. Provencal examples minimized the brutality of their slicing by making the slope steep—extending it down to the point of emergence of the tower from the roof. They might have done more. Instead of merely negating ugliness as far as possible, they might have left us a solution that had positive beauty. There was time for invention then.

WESTMINSTER PALACE, FROM THE VICTORIA EMBANKMENT;
FROM A PHOTOGRAPH BY MR. J. P. HODGINS,
TORONTO.

From this point of view, where there is nothing to be seen but towers, we appreciate the value of the towers. The whole extent of the building is marked out for us by them. The pavilion marks the near angle of the river front, the clock tower and Victoria tower the opposite ends of the other front, and the lantern rises in the centre. From whatever point of view the building may be looked at, a true impression of its extent is never lost. The aerial perspective given by the London haze, (which is so well rendered in Mr. Hodgins' photograph,) gives full value to the distance between the two great towers. This is architectural design, and the largeness of its character has so much to do with the quality of these buildings that it ought to have more to do with the controversy that is now going on in England, as to whether Barry or Pugin should have the credit of the design. The large man was unquestionably Barry, and the internal and external scheme are great. Pugin is said to have detailed the work ; in which case England has not, as somebody said, "wasted her gift of Pugin." But there is one point in the detailing—the universality of the ornament—which affects the general character of the building—the point where the architect comes in ; and we have an utterance of Barry that may be matched with this ; a saying to the effect that ornament will not be excessive if it is applied everywhere.

HEATING AND VENTILATION OF ST. PAUL'S HOSPITAL, MONTREAL.

In a paper read before the Canadian Society of Civil Engineers, a double duct fan system of heating and ventilation is described with a novel air washer and humidifier. Those of our readers who have had experience with fans for heating and ventilation will be interested in the air filtering device to remove dust and add moisture to the entering air.

An ideal system of heating and ventilation should maintain a constant temperature and supply fresh air in large quantities at a proper humidity without dust or drafts. Almost every system of heating is designed to maintain a constant temperature, but very seldom is the humidity

given consideration. It is not uncommon to find air in buildings very much drier than normal pure air, and an explanation is not difficult. Since air saturated at zero degrees will contain about one-half grain of moisture per cubic foot, and at 70 degrees one cubic foot will contain eight grains, it is clear that if air is heated from zero to 70 degrees the humidity at the higher temperature will be only 6 per cent., and the air will then be drier than the atmosphere of the Sahara Desert. This extreme dryness is very harmful to the mucous membrane of the human body, and it is in a large measure responsible for the prevalence of disease of the nose and throat in cold climates. It is also a noticeable fact that a high temperature is required if persons are to be comfortable with a low humidity. It is well known that a thermometer with a moistened bulb will register a lower temperature than a dry bulb beside it, but it is not generally known that the sensation of heat and cold experienced by people varies rather with the registration of the wet bulb thermometer than with that of the dry bulb. It is a common error to assume that the dry bulb thermometer gives a true indication of the temperature felt by human beings, and to consider all contradictory evidence as due to the mutability of human nature. Roughly, it will be found that with 55 per cent. relative humidity a temperature of 64 degrees will be as comfortable as a temperature of over 70 degrees, with a relative humidity of 30 per cent. From an engineering standpoint, therefore, we come to the same conclusion as a physician, who, discussing this subject, states that: "So long as we continue to neglect the indoor relative humidity we shall continue to live in unhygienic surroundings, created by any method of heating that is not supplied with means for properly moistening the air. To do this should be as much the purpose of a scientifically constructed heating system as to furnish sufficient heat."

Any system of ventilation will necessarily add not only to the first cost of a heating equipment, but also to the operating expense. Heat is considered essential because the lack of it at once affects our comfort ; while breathing impure air, when one becomes accustomed to it, produces no immediate discomfort. Through ignorance of the fundamental principles much money has been wasted in the past on inefficient or defective methods of ventilation. It is, however, considered poor practice to-day to design a heating system without at the same time making provision for a positive supply of fresh air free from dust or soot, and furnished to a building without drafts in any room. In the State of Massachusetts a law has been in force for several years making it compulsory to supply 30 cubic feet of fresh air per head per minute in all schools and public buildings. The amount of air usually estimated for buildings of different classes is as follows :

| | |
|----------------------|---------------------------------------|
| Hospitals (ordinary) | 35 to 40 cu. ft. per min. per person. |
| Hospitals (epidemic) | 80 " " " " |
| Workshops | 25 " " " " |
| Prisons | 30 " " " " |
| Theatres | 20 to 30 " " " " |
| Meeting halls | 20 " " " " |
| Schools per (child) | 30 " " " " |
| Schools per (adult) | 40 " " " " |

Fresh air contains about 4 parts carbon dioxide in 10,000, and the presence of 6 to 8 parts in 10,000 is scarcely noticeable, but the presence of 11 parts in 10,000 is distinctly perceptible, and when higher percentages are found the air is sufficiently stale to be not only uncomfortable, but actually injurious. Since an adult breathes about 500 cubic inches of air per minute, and as expired air contains about 3.4 per cent. carbon dioxide, it is clear that approximately 17 cubic inches of carbon dioxide are exhaled per minute, and from this data the following table has been prepared :

| Parts carbon dioxide in 10,000. | Cu. ft. of fresh air per min. per person. | Percentage respired air. |
|---------------------------------|---|--------------------------|
| 4 | Infinite | 0 |
| 5 | 100 | .29 |
| 6 | 50 | .58 |
| 7 | 33.3 | .87 |
| 8 | 25 | 1.45 |
| 9 | 20 | 1.74 |
| 10 | 16.7 | 2.03 |
| 11 | 14.3 | 2.32 |

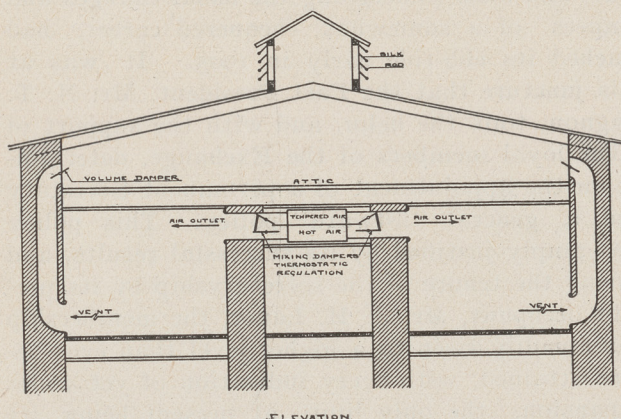
Common standards of good ventilation are taken as allowing between 6 and 8 parts of carbon dioxide to 10,000 parts of air, and a comparison of the two tables will show that they give about the same results. Allowance should be made for the size of the room and the period during which it is used at a time, for where there is a large space per capita, even if no fresh air is admitted, it will take some time for the air to become polluted.

With a system of forced ventilation there is a tendency to install small ducts, as the available space for ducts is generally limited, and by an increase of pressure the requisite amount of air may be delivered even with small ducts. It is a great mistake, however, to use a high

pressure, even though it be available, for at too high a velocity through the ducts a rush of air is distinctly audible, and air entering and leaving rooms at a high velocity will be certain to produce uncomfortable drafts. Some device for cleaning the air supplied is also necessary, for no matter where the inlet is placed there is bound to be mixed with the entering air some dust and soot.

We should then aim to keep a constant temperature at a constant humidity, and to supply pure screened air in positive quantities without creating perceptible drafts.

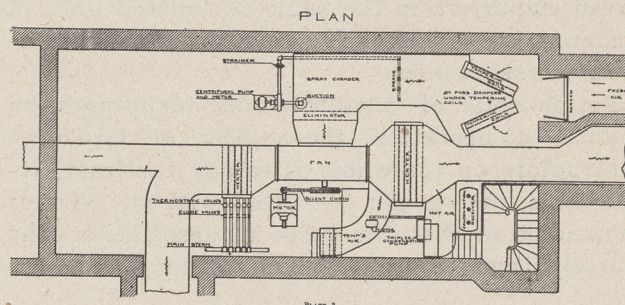
The equipment at St. Paul's Hospital consists of a motor-driven fan; tempering coils and heating coils, with their supply and return pipes; ducts for distribution of air, with deflectors for adjustment and dampers for control; thermostats for control of temperatures, and a combined air washer and humidifier for cleaning and moistening the air. The fan is a three-quarter housing steel plate, centrifugal with double discharge. It is driven by a direct-current motor by means of a chain drive. At full speed it delivers 45,000 cubic feet of air per minute, and by means of a rheostat in the field circuit of the motor two lower running speeds may be used. The coils are of the mitre type, which are usually employed for hot water, as the resistance to circulation is very low, and in this case they are used with low pressure steam for the same reason. Tempering coils are placed between the inlet and sprays to bring the air at least above freezing point. A temperature of 50 to 55 degrees is found necessary in the spray chamber, because the temperature in this chamber affects the humidity, and because some air by-passes the heating stack on the discharge side of the fan, and therefore goes to the rooms without a further increase of temperature. The distributing ducts beginning beyond each heating stack carry separately hot air, which passes through the heating coils, and tempered air, which goes above them. These ducts are kept separate until the mixing damper is reached, of which a detail is shown in Plate 1. In each duct there is a balanced damper, and



the two are joined together by a link, so that when one is open the other is shut, and vice versa. Thus a constant volume of air is supplied at a temperature varying in such a way as to balance the heat losses from the building. In most rooms the dampers are controlled by thermostats, to give a constant temperature, but in some they are arranged for hand regulation.

The air washer and humidifier is shown in detail in Figure 1. It consists of a number of spray nozzles in a plane at right angles to the course of the air, and a box of baffle plates, which remove the dust and water carried mechanically. The sprays are shown clearly in the drawing, and require no further description, but there are several novel features in the "dry box" which need explanation. In the fan room of the hospital space is very valuable, for every foot is below the ground level, and excavation is expensive. If the cross-section of the dry box is to be reduced we must figure on a higher velocity of air in order to handle the same quantity. In this case a velocity of about 350 feet per minute is used, and the loss in friction is so small as to be almost negligible. Considering that each plate is but two inches long, and the total thickness of the box 12 inches, it seems impossible that the moisture can be completely removed. A piece of dry paper placed behind the box at any point will show no trace of drops of water, however, nor is there any perceptible moisture on the last bend of the plates. The first bends are purposely left without projection to allow a film of water to form, and it is this film which collects most of the moisture and all dust or soot. The first projection prevents most of the film from being carried through, and the remaining projections remove thoroughly whatever water may remain. While we may depend upon the film to remove all water carried mechanically, the moisture carried by absorption is, on the contrary, increased to an amount dependent chiefly on the velocity of air through the plates. At any given running speed of the fan this velocity is constant, and the

relative humidity of air leaving the baffle plates at full speed remains nearly constant at 80 per cent., independent of the relative humidity of the entering air. If the temperature of the spray chamber is kept at 55 degrees, each cubic foot will carry 80 per cent. of 4.85 grains, or 3.88 grains of water, which will give a constant humidity of a little more than 55 per cent. when the air is warmed to 65 degrees. The temperature in the spray chamber is kept constant by a thermostat, which operates a by-pass damper below the tempering coils, admitting enough cold air to reduce the temperature as required. The air in the tempered air ducts will remain at 80 per cent. humidity, and the air in the hot air ducts will enter the room at a low relative humidity, but in either ducts 3.88 grains are carried by each cubic foot of air, which corresponds at 65 degrees to a humidity of 55 per cent., and if the rooms are kept at this temperature the humidity will be practically constant.



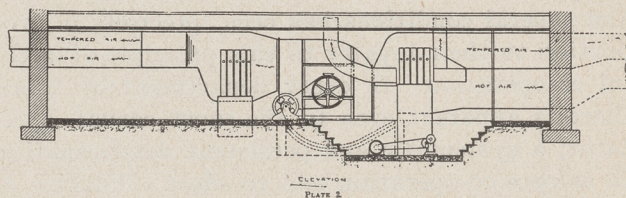
Both hot and tempered air ducts are made of galvanized iron of the following gauges:—

All pipes of less than 5 feet circumference, of No. 26 gauge; 5 to 8 feet circumference, of No. 24 gauge; 8 to 10 1-2 feet circumference, of No. 22 gauge; 10 1-2 to 13 1-4 feet circumference, of No. 20 gauge; 13 1-4 to 19 feet circumference, of No. 18 gauge; above 19 feet circumference, of No. 16 gauge.

The cross-section at any point of the air ducts is designed to give a constant friction per foot of length, and each branch is designed to receive its proportionate supply, though the amount of air it receives will depend largely upon the angle at which it leaves the main duct, and at this point a deflector is installed to permit careful adjustment when taking anemometer test.

There are four separate buildings to be heated, and the ducts run through tunnels to three of them. Hot and tempered air are carried in separate ducts from the coils and by-pass until close to the opening into each room, where mixing dampers are located as shown in the plate. As soon as possible after passing the dampers a gradual increase of 50 per cent. in the area of the duct is made, which makes the velocity of air entering so low that there is no perceptible draft. No register faces are used, but the iron of the duct is flanged back against the wall and covered with a plain wood border. This arrangement gives a neat appearance, and by doing away with register flow of air.

The vent flues all have dampers, which are, in most cases, kept partly closed to ensure a slight plenum in the rooms. All vent flues lead to the attic, in which there are two ventilating towers with moveable louvres. The louvres are made of a waterproof silk, with a rod at top



and bottom to keep its shape. The top rod is stationary in a frame, and the bottom rod is light enough to allow air to escape, but heavy enough to fall back in place if there is a tendency for air to enter.

It is noticeable that in such a ventilating system there are many adjustments to be made, but most of these are made when testing, and are then left permanently in a fixed position. After all deflectors are set no change can be made in the amount of air supplied except by varying the speed of the fan, and this can only be done from the switch-board. Thermostatic dampers in most rooms keep the temperature variation within one degree. Another set of thermostats placed in the fresh air inlet are adjusted to close off one coil of the heating stacks at 10 degrees above zero, a second at 20 degrees, and a third at 30 degrees. Similarly, one section of the tempering coils closes at 60 degrees. The temperature regulation is thus taken care of, and since, as already explained, the humidity is controlled automatically, the only attendance that is required is the occasional cleaning and oiling of motor, fan, and pumps.

THE MONTREAL BUILDERS' EXCHANGE.

Building Employers' Associations, or as they are now generally known under the title of "Builders' Exchanges," are no longer in the experimental stage. The need of such organizations has been amply demonstrated by their rapid spread throughout every building centre on this continent. They meet the commercial need of the busy contractor in forming the nucleus of a co-operative association, all ready to hand; they also offer the opportunity of a closer and more friendly approach to social intercourse between employers in the same or kindred lines of business, instead of eyeing each other askance as their worst enemies.

Yet in spite of these obvious advantages in mutual co-operation, the apathy of Canadian contractors on the whole is to say the least, remarkable, and it can be stated without serious contradiction that the value of association has scarcely begun to be appreciated, far less realiz-



MR. N. T. GAGNON,
Past President Montreal Builders' Exchange.

ed, by the building employers of Montreal. It has been realized by the working classes, and every success they have had in improving wages and general conditions has been precisely in proportion to their loyalty to this principle of faithful co-operation. In every department of labor there is apparent even to the most casual spectator, a systematic and persistent determination to enforce co-operation and to effect solidarity of interests between all the various branches of labor organizations, and thus ultimately to capture and dominate the whole labor situation.

Whatever faults our American cousins may appear to have (and we have a few "glass-houses" here to remind us of a wise discrimination in throwing stones) they certainly have the virtues of enterprise and energy. They have been swift to appreciate the value of the tactics of the labor party in systematic organization, and to get together on matters of common interest; the large and flourishing Builders' Exchanges of Boston, New York, Philadelphia, Baltimore,

Pittsburg, Buffalo and Cleveland are "living epistles" of what can be accomplished in this direction by determination and loyal co-operation, as contrasted with the "splendid isolation" affected too often by our own contractors.

The Builders' Exchange, of Montreal, had its origin in a meeting held at the Windsor Hotel, on 29th November, 1897, to discuss the desirability of forming such an institution. A representative gathering of leading firms in the building industry decided the question in the affirmative, and so the new-born institution was launched into the troubled waters of this mundane sphere.

A charter of incorporation was sought and obtained from the Quebec Legislature in June, 1899, and it is interesting to know that the original charter members—Messrs. Jas. Simpson, C. T. Williams, Peter Lyall, Amos Cowen, John Maclean, Frank Fournier and Walter P. Scott—are all with us yet as active members of the building fraternity. The first President was Mr. Jas. Simpson, followed in due order by Messrs. C. T. Williams, J. H. Hutchison and N. T. Gagnon. From a modest beginning of some thirty members the Exchange grew to 100 in its second year, and after undergoing the usual changes and chances of a somewhat chequered career, had reached its ebb-tide early in 1905. It was at this juncture that the Past President, Mr. N. T. Gagnon, took the helm, and with the support of other loyal members of the Exchange, determined on the appointment of a permanent Secretary and a general "forward" policy. This policy was amply justified by its successful results, and during the tenure of the secretaryship by its present occupant, Mr. J. H. Lauer, the membership has steadily risen to a higher level than ever before attained, with every indication of yet wider expansion, the only limit at present being its present quarters.

The Montreal Builders' Exchange desires to extend the scope of its usefulness in the future, and is well alive to the value of "Permanent Exhibits" to proprietors, architects and contractors alike. Additional space is the crying need of the Exchange just now to enable it to undertake this and other improvements, and the extreme values of real estate on St. James street will necessitate removal to a more reasonable locale; as soon as this can be accomplished the exhibition feature will not be long in becoming a "fait accompli."

J. H. Lauer,
Secretary.

There has been negotiations between the journeymen's union and Toronto master plumbers, the former asking an increase in wages from 35 cents per hour minimum to 40 cents. A large number of the masters have joined the Employers' Association in the absence of life in the old Master Plumbers' Association.

At a recent meeting of the Montreal Chambre de Commerce, the advisability of imposing a tax on United States contractors doing business in Canada was discussed. It was stated that Canadian contractors had to pay a tax in the United States. The matter was referred to the committee on industries and manufactures.



SUPPLEMENT TO
CANADIAN ARCHITECT AND BUILDER
APRIL, 1906

THE LINTON APARTMENTS, SHERBROOKE ST., MONTREAL.

MESSRS. FINLEY & SPENCE, ARCHITECTS, MONTREAL.



THE HOME BANK OF CANADA.

HEAD OFFICE, TORONTO.

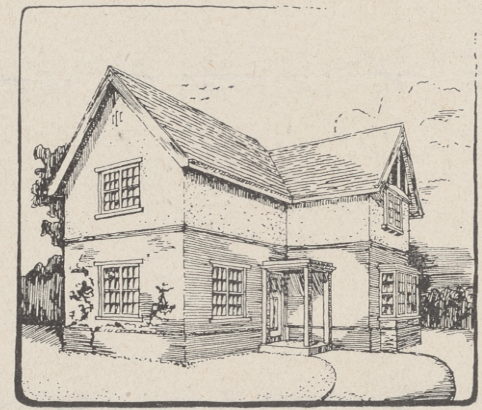
MR. BEAUMONT JARVIS, ARCHITECT, TORONTO.

CANADIAN ARCHITECT & BUILDER COMPETITION.
 DESIGN FOR A SIX-ROOM COTTAGE.
 SUBMITTED BY "ECONOMY"

SCALE - 1 IN = 8 FEET



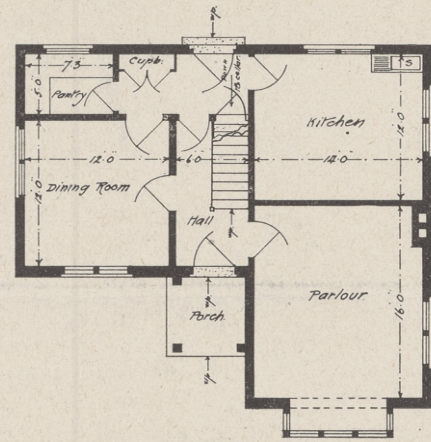
REAR ELEVATION



SKETCH



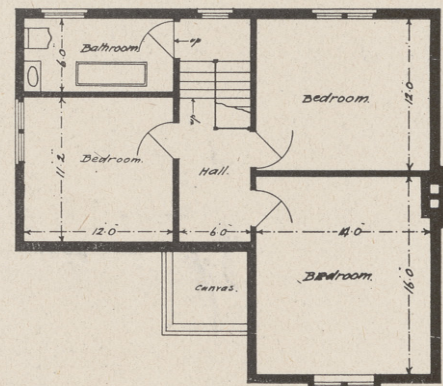
SIDE ELEVATION



GROUND FLOOR PLAN



FRONT ELEVATION



FIRST FLOOR PLAN

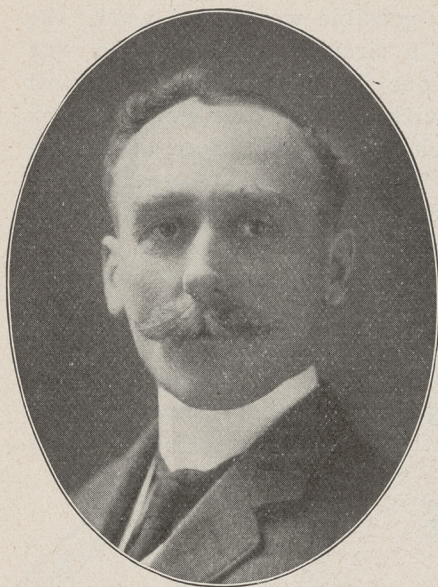
"THE CANADIAN ARCHITECT AND BUILDER" COMPETITION FOR A HOUSE OF
 SMALL COST IN A COUNTRY TOWN.

DESIGN BY MR. VICTOR G. STEER, AWARDED THIRD PRIZE.



THE MOLSONS BANK, TORONTO.

MESSRS. FINLEY & SPENCE, ARCHITECTS, MONTREAL.



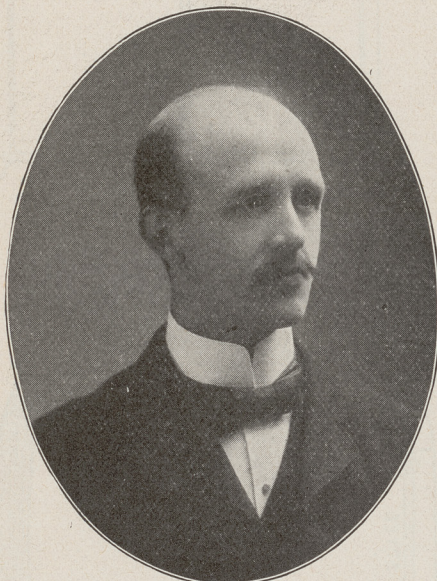
MR. R. GEORGE HOOD, President.



MR. J. H. LAUER, Secretary.



MR. JOSEPH O. DESLAURIERS, Vice-President.



MR. JOHN DUTHIE, Director.



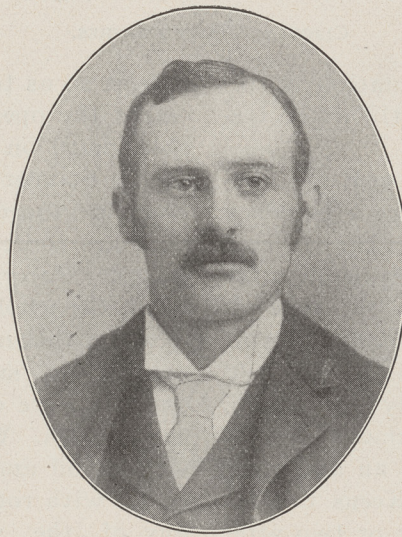
MR. JOSEPH THIBEAULT, Director.



MR. W. E. RAMSAY, Director.



MR. J. N. ARCAND, Director.



MR. W. B. SHAW, Director.



MR. ALEX BREMNER, Director.

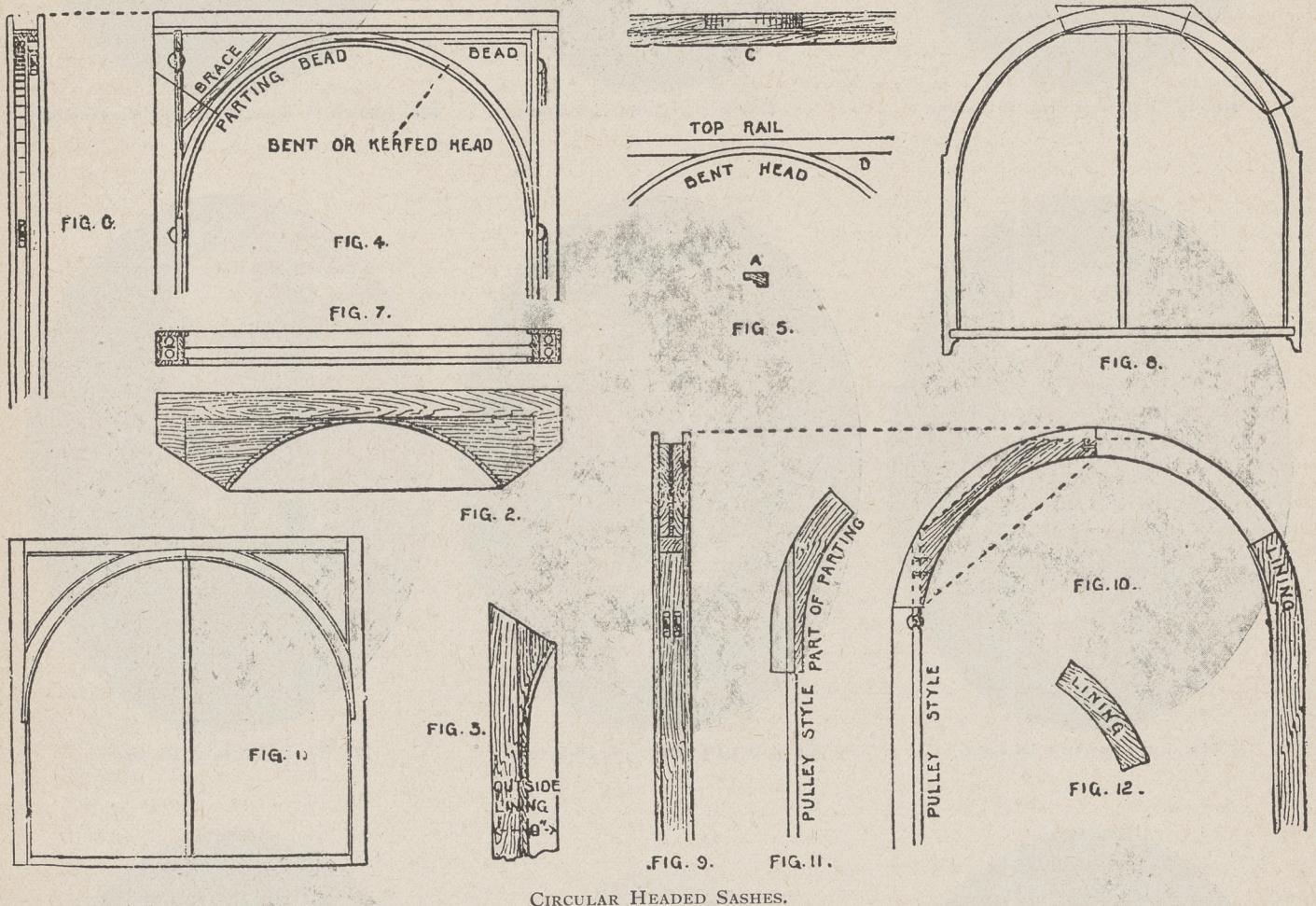
OFFICERS AND DIRECTORS OF THE MONTREAL BUILDERS' EXCHANGE.

INTERCOMMUNICATION.

[Communications sent to this department must be addressed to the editor with the name and address of the sender attached not necessarily for publication. The editor does not hold himself responsible for the expressions or opinions of correspondents, but will, nevertheless, endeavor to secure correct replies to queries sent in. We do not guarantee answers to all queries neither do we undertake to answer questions in issue following their appearance.]

A "Correspondent" asks: Will you, through the columns of The Architect and Builder, kindly advise as to the best method to be employed to make a Keens cement smooth finished dado (such as done in bath rooms), appear as tile, as to joints, and the best manner of making them, and are there any special tools for such work, if so where can they be obtained, or can the work while in its green state be marked with a

upon it easily, it is quite firm enough to scour. Use as little as possible water and work the hand float with a circular motion. Do not work too long in one spot, but keep moving all over the surface within reach, and working back again until the whole surface has an even texture and grain. The work should be gone over twice to bring it up to a fine solid surface. When the surface has to be polished, the work by the trowel must be followed by a nine-inch joint rule and a damp brush, but this work must not be attempted until the surface is hard. The work may be lined off before it "sets" completely hard by using a straight edge and a small V tool. This tool is something like a carver's tool, but



CIRCULAR HEADED SASHES.

pencil and be durable? Any information in regard to the foregoing will be greatly appreciated.

Ans.—Keens or any of the white cements, owing to the suction of the walls, have a tendency to shrink more or less, according to the stiffness of the gauge and the suction, and therefore must be floated and run in twice. When the coat already laid on is firm, then some more cement, gauged softer than the first, should be laid thinly all over and floated in carefully as before. Having done all this, the whole surface is nearly ready for scouring. Miller, who is an authority on matters of this kind, says Keens Cement should be allowed to stand an hour or two after being floated before being scoured or rubbed down. If the finger cannot make an impression

is bent so as to do the cutting as it is drawn towards the operator. It should have an adjustable guard on it that can be fastened to it in such a manner as will prevent the tool from cutting in too deeply. Bricklayers jointers only finer are sometimes employed in forming these joints. After the tiling is all marked off and lined, the whole surface may be moistened slightly, and a thin mixture of Portland cement—neat-colored to suit may be rubbed into the joints, and the face of the work cleaned off with a damp cloth. When fairly dry the whole may be cleaned off and polished in the usual manner either with rotten stone and water or oil, or by any of the numerous methods of polishing marbles or cement surfaces. An exceedingly good piece of work can be turned out, if the workman

does his duty with care and skill. A good background or first coat, is a necessity for work of this kind, and it is suggested that cement mortar be used for the first coat. Any, or all the tools required to do this work should be obtainable at any first-class hardware store in the country.

From "Superintendent."—My work calls me to figure the cubical contents of thousands of cars annually, and I would like to know if you have a book of some kind with tables whereby I could lessen my work. Length of cars would be 27-0 to 40-0, width 8-0 to 9-6 and height 2-0 to 3-6. If so, kindly state particulars and price?

Ans.—Any good work on mensuration should give good rules for obtaining the cubic contents of the cars mentioned. You will find first "The Canadian Contractor's Handbook and Estimator," a very useful book in matters of this kind, also "Hudson's Modern Estimator," in which rules are given for cubing work of any kind. From these books, a table could easily be computed that would serve the purposes of our correspondent. These book may be obtained from the office prepaid for \$1.50 each.

From Novice.—Will you kindly show by diagrams how window frames and sashes are made with circular heads outside, and square ones inside, also how the sashes are made with regular circular tops or heads?

Ans.—It would take much more space than we can afford to describe fully all you ask for. However, we will give a short description, also show a few diagrams, that will no doubt be of use to you. Referring to the diagrams we have:

Semicircular-headed Sashes and Frames. Fig. 1—The appearance given by means of sash, an ordinary frame being used with linings shown at Fig. 2 and 3. Fig. 2—Outside top lining for ditto. Fig. 4—Ordinary sash frame modified to give outside appearance of semicircular top; upper sash has semicircular top. Fig. 5—Connection of bent head and top rail—A, section; B, elevation; C, plan. Fig. 6—Elevation of inner surface of pulley style. Fig. 7—Plan of sash frame. Fig. 8—Sash for semicircular headed frame. Fig. 9—Outside of arch: Elevation showing back of pulley style. Fig. 10—Elevation of arch with parts of construction exposed. Fig. 11—Part of parting. Fig. 12—Part of lining.

Then: (1) An ordinary frame with suitable outer lining. A sash frame consists of a sill, often made of oak, two pull pulley styles, a top rail, a set of three each outer and inner linings, parting beads, generally $\frac{3}{8}$ in. thick, and outer beads, commonly $\frac{5}{8}$ in. by $\frac{7}{8}$ in., with parting strips, wedges, etc., which are concealed inside. Though these will not be described, it is hoped that their places and use will be sufficiently indicated in the drawings. Now, it is obvious that an ordinary sash is fitted with an upper sash like Fig. 1, it would become necessary to make the outer linings like Figs. 2 and 3, and then the outer appearance desired would be secured. The

sash would require the chief alteration. This consists of the two added rails placed diagonally in the upper corners, and having their edges cut to the required curve and the moulding worked in the same pattern as the styles. The moulding and rebate can be made with those iron spoke-shaves made for the purpose, if one can be found to agree with the moulding-plane used for the straight work. Failing this, in painted work the moulding can be worked on a piece of straight-grained oak or mahogany, and cut off neatly, so that it can be bent, glued, and beaded to the curved rails, forming at one operation both moulding and rebate. If this is well done and the joints in the added moulding not coincident with the other joints, it will make a very fair job. The whole of the inside moulding might with advantage be in one piece, and the joints of the added rails in the corners should be made as in the drawing before the frame is glued up. Of course, another method would be adopted in shops where a spindle-moulding machine forms a part of the plant. In this plan no alteration is required in the position of the sash pulleys or in the method of fitting the beads.

(2) The next modification is that of fitting into the top of frame an arched rail. This may be cut in segments, bent in layers round a drum, and glued up, or cut out of two solid pieces, or bent by the aid of kerfing, with or without a veneer glued on; or, in fact, by any of the methods used to produce a curved rail. The rail need only be a trifle thicker than the sash, for the outer linings shown in Fig. 2 and 3, together with the parting beads (which are also shown at 2 and 3 in the part up to the lines, and shaded darker) are affixed outside the curved rail, and very much add to its strength.

The straight top rail should be cut away equal to the thickness of the added curve rail where the two are attached to each other, as in Figs. 4 and 5. Fig. 4 shows the frame without the linings, and Fig. 5 the connection of the straight and curved top rail. Fig. 6 shows the side view of frame, with the position of the sash pulleys, which in this frame is different to that just described. The pulley styles, which should not be less than $1\frac{1}{4}$ in. thick, ought also to be notched to fit the curved rail, as shown in Fig. 7 as well as in Fig. 4.

(3) In the semicircular-headed frame and sash, more than anything that has been described, circumstances alter cases, and nothing we write here is to be taken as specific, but only as suggestive. If you have in hand a specially dry piece of stuff of thickness equal to width of the pulley styles, and have appliances suitable for making the groove for parting. These explanations, along with the diagrams, seem to be all that is required for an understanding of the subject.

Options have been secured on several valuable gypsum properties in Hagersville, Ont., by Mr. J. T. Mullaney and Mr. M. A. Reeb of Buffalo, N. Y. It is proposed to establish a large crushing mill and refinery in the vicinity of the Grand Trunk Railway station at a cost of about \$50,000.

MONTREAL NOTES.

Several circumstances have combined of late to bring the office of City Building Inspector prominently before the public. When on the 3rd of April a newly erected water tank on the top of a building in St. Paul Street collapsed, resulting in the death of a young woman employed in the building, many indignant protests were heard on all sides regarding the looseness with which such operations were controlled. A little previously another tank had collapsed in somewhat similar circumstances, though without any fatal effects. Two such accidents within a few days make a strong appeal for public control. If care for their own reputation and for the lives and properties of their employers is not sufficient to compel constructors to make safe their work, then the civic authorities may very well be expected to step in. The Building Inspector, when appealed to in the matter, points out that his department consists of himself and one assistant; and it is obvious that a department of this size cannot be expected to keep touch with all operations, including the construction of buildings, and the installation of sprinkler and other plant therein; to calculate the strain on every stick and stone which builders propose to employ, and finally to see that, when rightly calculated, the members of structures are according to all the calculations and requirements of the case. In connection with the tank trouble, the Builders' Exchange has come forward with the suggestion that the erection and inspection of these tanks should be undertaken somewhat on the lines of boiler inspection, and this may be the right and proper solution of this particular difficulty; but it does not touch the general weakness of the present state of affairs, which leaves it till some such tragedy as the present has occurred before there is any reasonable chance of proper precautions being observed or compelled in such cases.

Another matter in this connection that has been much before us lately is the question of dark rooms in dwelling houses. It is stated that houses with rooms that have no direct communication with the outer air are being erected by hundreds. If in such an important and obvious matter as this the laws of hygiene are being so completely set at naught, what hope can we have that in lesser matters the poorer class of tenants are given a chance for healthy living. We pass by-laws prohibiting spitting on the sidewalk, and at the same time permit consumption and other mortal diseases to be forced upon the poor man by the airless rooms he must rent. Again, the Building Inspector points to the extent of his staff, and to the fact that fire risks and not sanitation are his special department. There is a Health Department to which he reports cases of unsanitary arrangement. The civic health officer declares he can take no action because the by-laws only demand that "habitable" rooms be properly ventilated, and the city attorneys' interpret "habitable" as meaning "actually inhabited." Meanwhile in all ordinary rational walks of life "habitable" can only mean "capable of being inhabited," and the difference of interpretation is responsible for the ill-health and premature death of hundreds.

Now towards the efficient inspection and care of buildings there is one very obvious initial step which, simple as it is, would go a long way towards improving the present unsatisfactory state of things. This is the deposition at the Building Inspector's office of plans of all buildings about to be erected or altered. Considering how often this has been advocated by individuals, by the Province of Quebec Association of Archi-

itects, and by the Building Inspector himself, it seems amazing that it has never been put in force. According to the present system plans are expected to be approved by the Building Inspector at sight. They are not left in his hands. Nothing more than a most superficial inspection is possible. The plans not being in his safe-keeping are not available to him to refer to at short notice, and they are liable to be lost or destroyed at any time. Any system of inspection which claims to be thorough must surely have some tangible basis to work from. To have all plans carefully under review would mean that the Building Inspector would have an opportunity to give deliberate consideration to novel features, such as the construction of over-roof sprinkler tanks or anything else; and competent officials could be called in to pass upon them. Opportunity would be given to architects or builders presenting plans to have their attention called to by-laws, greater or less, old or new, which they might have deliberately or inadvertently been about to transgress. The systematic operation of such a system would naturally tend to more thorough and general acquaintance with and observance of the city's by-laws. With copies of all plans in their possession, the civic authorities would be in a position to form some idea of the scope and requirements of an inspector's department and to employ a staff capable of overtaking all the duties.

The Builders' Exchange, of Montreal, are taking steps with a view to establishing greater uniformity of practice in regard to methods of obtaining tenders and of making out conditions of contract. There can be little doubt that a uniform form of contract for the generality of work could be drawn up in such a way as to meet with general acceptance both by architects and builders. In the matter of obtaining tenders, however, there exists such divergence of practice and of sentiment, in regard to many points, that it will be difficult to introduce uniform rules. This, however, is probably a good reason for making the endeavor. The sooner the discussion of the subject is undertaken, the sooner will a satisfactory practice be arrived at. A sub-committee of the Province of Quebec Association of Architects has been appointed to confer with representatives of the Builders' Exchange on the subject.

At the twenty-third spring exhibition of pictures held in the Art Gallery, in Philip Square, from March 23rd to April 14th, the exhibit of architectural drawings seemed this year to be rather smaller than it was last year. The principal position was given to a pleasant water color drawing of the Nurses Home at the Royal Victoria Hospital, by Messrs. Ed. and W. S. Maxwell. The building maintains the Scottish Baronial style of the hospital buildings, with a little less severity of aspect. Prof. Nobbs exhibits sketches of three pleasant little houses and a drawing of the interior of the lounging room of the McGill University Students' Union. As drawings these all possess something of the combination of crispness and tenderness that is the special beauty of water color work. Messrs. Finley and Spence show five large drawings of different buildings. Besides some that have been referred to before in these notes, they represent the Molson's Bank, Toronto, and the Federal Life Assurance Co's. premises, Hamilton. Most of these drawings are signed J. Fitzpatrick, and look solid and faithful renderings of the buildings. Messrs. Saxe and Archibald entered the competitive drawings for Emmanuel Congregational Church, which, in black and white wash, looks ghostly amongst the surrounding color.

The same firm have a colored elevation of a store for Messrs. Robinson & Co., which exhibits a quaint originality of treatment. The tone of red brick suggested is not quite happy—the less so as there is nothing to suggest joints or agreeable surface texture. Messrs. Ross & Macfarlane have two drawings—a design for a new library at Bishop's College School, Lennoxville, and the new office building for the Dominion Guarantee Co.—pleasant drawings in black and white, with a faint suggestion of color. Messrs. Castle & Son send three designs for interiors, which suffer from the huge scale on which they are drawn. They might look well at a greater distance than it is possible to get in the little room where they hang. Mr. Louis Farey has four designs for interior treatments. Those that follow on the historical styles, though not in all cases in strict accord with history, are pleasing and compare favorably with the more original design for an ingle-nook. Mr. Mitchell has some careful sketches of Melrose Abbey. Mr. Rickson A. Outhet has a couple of garden designs—the one in perspective is pleasantly treated, but the garden paths, being white, can hardly be true to reality, and the circumstances impoverish the effect of the drawing.

THE SKETCH CLUB OF THE P. Q. A. A.

On the 14th of March, Prof. C. W. Colby, of the chair of history at McGill University, gave a lecture before the above Club, taking as his subject "Brunelleschi." The lecturer illustrated the remarkable character of this grave and gentle Florentine, who turned the stream of architecture into the renaissance channels which had been in part prepared for it by the general change of sentiment and study of the age. Trained at first,

like so many of the great artists of the period, in the workshop of a goldsmith, Brunelleschi tried one art after another without distinguished success. Foreseeing that the problem of covering with a dome the great cathedral then rising in the midst of Florence, would require a knowledge and resource no architect in the city then possessed, he sold his small estate and journeyed to Rome to study night and day, in order that when the hour should come the man should not be wanting. After fourteen years unremitting study in Rome, he returned to Florence when the question of the dome was being agitated. He alone could speak with confidence in the matter. Envy, greed and mistrust barred his way; but that course that the master had set, when he started for Rome so many years before, he was to steer successfully to the end. The dome was a triumph and is the glory of the Florentines. On the slab that marks Brunelleschi's place of rest in the cathedral is the simple inscription "Philippus, Architector." "Philip," for one name suffices for the great and well beloved; and in the shadow of that great dome he is "the architect."

On the 21st of March, Mr. Lemasnie spoke on the subject of "The Composition of Natural and Conventional Forms." By the medium of sketches on the blackboard, Mr. Lemasnie illustrated the simple lines which form the basis of ornamental design, tracing the same underlying principles in the conventional forms of architecture and in the animate forms of nature. In conclusion, he strongly recommended the study of plant life and other phases of nature, as a means of infusing freshness and enjoyment into our ideas of design.

On March 28th, Mr. Pollard reviewed the work

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of Mrs. Edith Wharton on "Italian Villas and Their Gardens," calling attention to the excellent appreciation of architectural effects in which the work abounds, and also, incidentally, to the excellent illustrations by Maxfield Parrish.

CORRESPONDENCE.

To the Editor "The Canadian Architect and Builder":

For the benefit of brother architects, and twenty-six in particular, the writer wishes to call attention of the profession to the urgent need of a more thorough understanding and united action in regard to competitions.

While it must be acknowledged that the award in a majority of cases is open to criticism, yet we are solely to blame for the conditions of unjust competitions, which are due to faulty proposals accepted by the architects competing.

A certain city called for competitive plans for a City Hall to cost \$60,000, naming the accommodation desired, but did not bind themselves to accept any plan, neither did they agree to employ an expert to advise with them in the selection of plans.

Upon plans being submitted (twenty-six in number) it was found that the amount mentioned was not sufficient, and plans were returned to the competitors with a note, saying it had been found that none of the plans submitted could be built for the amount stipulated, and that the Council had determined to increase the amount to \$100,000, and inviting the architects to amend their plans accordingly.

Sixteen sets of plans were submitted on the second appeal, and it is now where the mistake occurs; the plans were placed on public exhibition, before the award was made, thereby inviting public comment, criticism, and a natural inclination to guess who were the authors of the various plans.

The Council called in an expert to advise with them as to the probable cost of a design they had selected. He reported the cost to be \$169,000. (This was before final specifications were written.) This report should have disqualified the plan in question. The Council entered into correspondence with the architect, and asked him to submit working drawings and procure tenders, notifying him, at the same time, if his building exceeded \$100,000 in cost, that they were to be at no expense.

Result:—Tenders called for; lowest tender, \$108,000; average tender is \$130,000.

Now for the unfairness of the deal: The general conditions as drawn up by the Council explicitly state that the finish shall be of hardwood throughout, brick shall cost \$40 per M. The basement walls were to be laid up in hard burned brick in Portland cement mortar; but the architect whose plans were accepted, having proposed a building containing 675,840 cubic feet, found it inconvenient to carry out these conditions and still retain his original plans, so he violated the self-imposed conditions at will, skims his building of its just rights, and produces a specification that gives a building to cost 16 cents per cubic foot.

The Council in accepting these plans have violated their own conditions and rules knowingly. I say this advisedly, for their attention has been called to this matter by the local architects, as well as by architects from outside.

Initiators of competitions rarely impose conditions willfully, but ignorantly, and most frequently because they find members of the profession—well educated men of reputation—eager to make and present drawings with or without conditions. The character of the programme, no matter how faulty, is no bar to the zeal with which members of our profession work day and night, expending energy and brain power, on elaborate drawings, without any reason to expect, or even hope, that the best scheme or the most artistic design, will be the one adopted.

He who promises the impossible usually secures the work, while a design that could be honestly carried out for the amount named is seldom considered.

How many doctors, dentists, lawyers, or artists would enter a "free" competition, and submit a prescription, set of teeth, brief, or portrait, to be judged by a committee of non-professionals, and returned with or without a "thank-you" if their work did not please? What class of men in these professions would enter such a race? Would their services be desirable?

Apparently the committee thought they were complimenting the architects by allowing them an opportunity to display their wares.

For the benefit of those architects who competed, the writer will say that in his opinion there were at least five sets of plans submitted that were infinitely more imposing in both design and plan than those selected by the Council, and which could be built for the price mentioned and in compliance with the general conditions as laid down by the Council in question.

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Among the plans submitted, and which appealed to the writer, were those entered under the nom de plume of Victoria, Winterott, Ormande, Craftsman, and Arenco.

The cost of producing the drawings in this case are considerable; twenty-six at the first call and sixteen at the second; forty-two plans at an average cost of \$100 is not too high a price to assume, thus the architects have wasted \$4,500 without the slightest assurance of even a square deal.

The object of a competition should be to secure the most skilled architect, as shown by the scheme which he presents.

An architectural adviser should draw up the programme and advise the owner in relation to technical questions in making the programme, selecting the scheme and the architect.

The amount to be expended on the work should be sufficient, within a reasonable margin, to erect a structure of the character and size indicated in the programme, or there should be no cost stipulated.

The programme should be in the nature of a contract, which guarantees the employment of the successful competitor to make the drawings for and supervise the work of the proposed structure at a proper remuneration.

Payment sufficient to cover the preparation of the drawings demanded of competitors in limited competitions, and prizes or premiums in open competitions, to cover such expense for at least the five best schemes should be guaranteed.

Sincerely yours,
W. W. LACHANCE, Architect.

Regina, Sask., Feb. 20th.

This letter should have appeared last month but for want of room.—Ed.

NOTES.

We regret to record the death at Hamilton of the wife of William Stewart, Architect, of that city.

The Northwest Electric Company, Calgary and Edmonton, has just finished the wiring of the new Penitentiary at Edmonton.

W.M. Dodd Architect, of Calgary, Alta, has opened up a branch office at Edmonton. This office is under the management of Mr. P. J. Ross.

The Mechanics' Supply Company, Quebec; H. McLaren & Company, Montreal; The Vulcan Iron Works, Winnipeg, and Boyd, Burns & Company, Vancouver, have become agents for the Taylor-Forbes Co., Guelph.

Mr. Jeremiah Sears, the oldest painter in Toronto, has been made a life member of the Master Painters & Decorators Association of Toronto. The presentation of the life certificate was accompanied by that of a bank book in which a substantial deposit had been entered to his credit. Mr. Sears was born in 1823, at Maidstone, Kent, England. He is active and hearty and still pursues his calling.

The Superior Portland Cement Company, of Orangeville, Ont are busy installing their plant, which they expect to be running this summer. When completed the plant will be one of the most up-to-date in Canada, and will be capable of turning out close on 1000 barrels of cement a day. Owing to the close proximity of the marl and clay beds from which they will draw their raw material, the company are in a very advantageous position, and have excellent prospects before them.

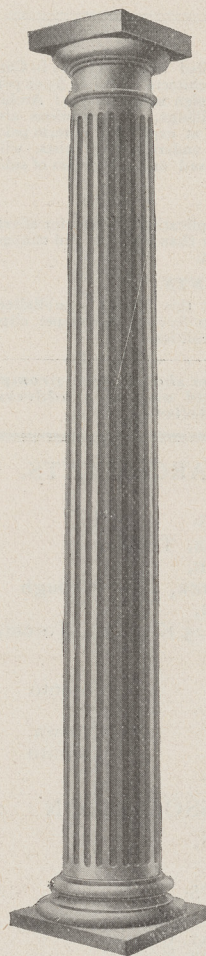
The Standard Sanitary Manufacturing Company, of Pittsburg, Pa., manufacturers of the "Standard" porcelain enameled baths and sanitary goods, will this year erect a large modern plant at East Camden, New Jersey, for the manufacture of these goods.

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Allis-Chalmers-Bullock, Limited, under new management, have leased a suite of offices in the new Traders Bank building, Toronto.

The Convention of Master House Painters and Decorators of Canada will be held at Windsor on July 24-25-26 and from present appearances promises to be the most successful meeting of Master Painters that has ever taken place in Canada yet. Leisure time will be put in on the beautiful waters of Lake St. Clair and the Detroit river, so that the occasion will be made a pleasant outing.

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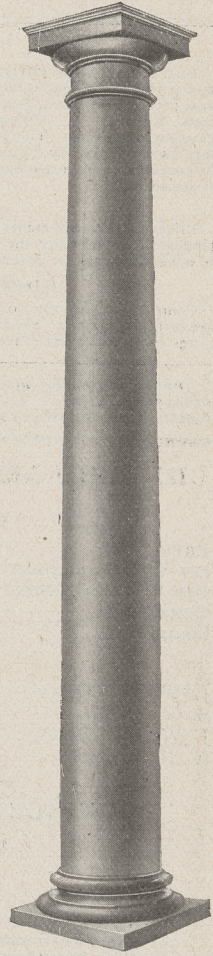


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OFFICERS 1906.

President, Ernest J. Russell ; Vice-President, Frederick M. Mann ; Corresponding Secretary, Wm. B. Ittner ; Recording Secretary, Ernest Helfensteller, Jr ; Treasurer, John C. Stephens ; Samuel L. Sherrer Jesse N. Watson.

The Executive Board has decided to have printed 1000 copies of the resumé of the proceedings of the New York Convention. Also 1000 copies of the Constitution, and to include in the same pamphlet the code on competition. These will be sent the members of the League sometime during the month of April.

DELEGATES TO THE INTERNATIONAL CONGRESS.

The following delegates to the International Congress of Architects to be held in London in July have been elected. (Other members of the League are urged to elect their delegates at once and send the names to the Corresponding Secretary.)

At large, E. J. Russell, N. Max Dunning ; St. Louis Architectural Club, Wm. B. Ittner, Washington Architectural Club, Geo. O. Totten, Jr.; Brooklyn Chapter A. I. A. Isaac E. Ditmars.

COMMITTEES :

J. P. Hynes of Toronto has been appointed Chairman of the Committee on European Tours, the other

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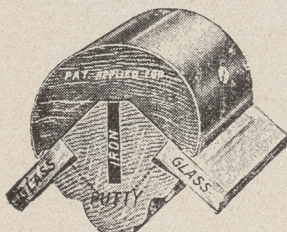
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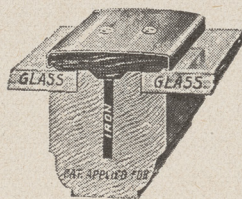
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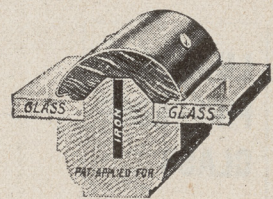


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members of the Committee being Emil Lorch and Nicola D'Ascenzo.

Albert C. Kelsey has been appointed Chairman of the Committee on Foreign Correspondence and has selected Max Dunning and Kark Bittner to serve with him.

The following is a list of the members of the various Committees so far selected :

PUBLICITY AND PROMOTION:—John Moliter, Philadelphia, Chairman, C. Horton Churchman, Alex M. Adams, Emil Lorch.

CURRENT CLUB WORK:—J. P. Hynes, Toronto, Chairman, J. C. B. Horwood, J. M. Lyle.

EDUCATION:—Newton A. Wells, Urbana, Ills., Chairman; R. C. Spencer, J. W. Case.

CO-OPERATION WITH THE INSTITUTE:—Wm. B. Ittner, St. Louis, Chairman.

CIVIC IMPROVEMENT:—Frederick S. Lamb, New York, Chairman.

FOREIGN SCHOLARSHIPS:—N. Max Dunning, Chic-

ago, Chairman; Hugh M. Garden, R. C. Spencer, Jr. CIRCUIT EXHIBITION:—Newton A. Wells, Urbana, Ills., Chairman.

FOREIGN TRAVELLING SCHOLARSHIP:

A preliminary competition was held on February 25th, and 23 men entered. The final drawings are to be submitted April 24th.

HARVARD SCHOLARSHIPS.

Preliminary notices have been sent out, April 15th, having been selected as the date for holding the competition. Owing to the fact that this date falls on Easter Sunday, it was deemed advisable to postpone it for a week; which will make the date April 22nd. The final drawings are to be completed by April 30th, and sent to Wm. B. Ittner, Corresponding Secretary, Board of Education Building, 9th and Locust Sts., St. Louis, Mo.

The announcement of the winners will be made

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immediately thereafter, and the award certified by the authorities at Harvard. The School year begins September 27th.

WASHINGTON UNIVERSITY SCHOLARSHIP.

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Mr. J. P. Hynes of Toronto attended the Annual Convention of the Architectural League of America held in New York recently, and was honored by being elected Chairman of the Standing Committee on Current Club Work.

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It is often troublesome to clean old neglected marblework. When once there is blackening through any cause, it is dangerous to the effect, and not only is there great risk of scratching, but carved parts are very liable to be destroyed or seriously damaged. Potash water sometimes answers, finishing with water having just a dash of hydrochloric acid. Soap and water spread on with a brush and care and patience may suffice.

For difficult cases take 2 parts of soda, one of pumicestone and one of pulverised chalk. After sifting these through a sieve, make them into a paste with water. Rub this mixture thoroughly over the marble, and you will find the stains disappear. Now just wash with soap and water, and a fine polish will result.

Another way is to clean with diluted muriatic acid, or warm soap and vinegar. Then heat a gallon of water in which is dissolved 1 1/2 lb. of potash. Add 1 lb. of virgin wax. Boil for thirty minutes, cool, and let the wax float on the surface. Put this wax into a mortar and reduce it with water and a pestle into a paste. Lay this on the marble, and rub, when dry with a soft rag.—*The Decorators' and Painters' Magazine.*

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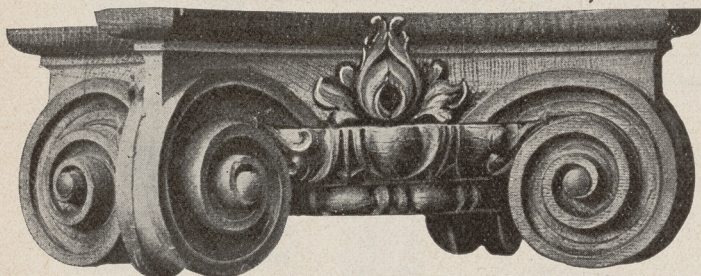
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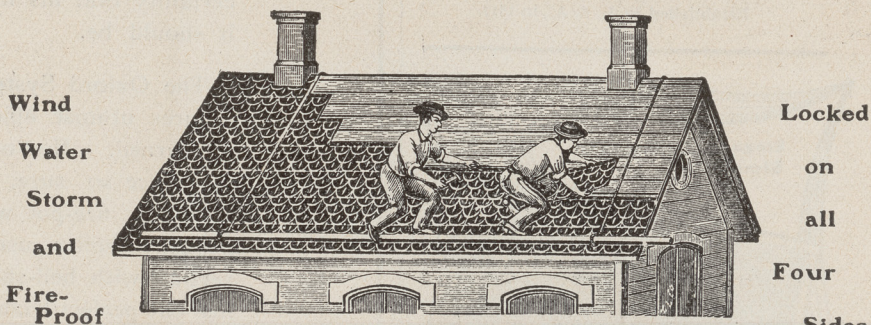
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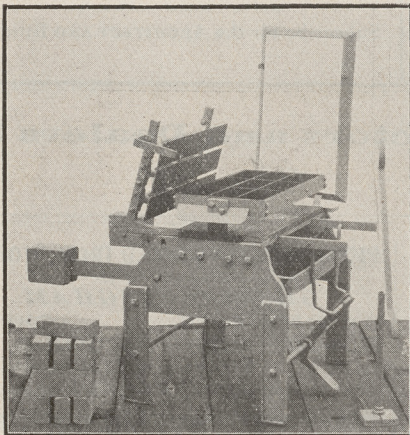
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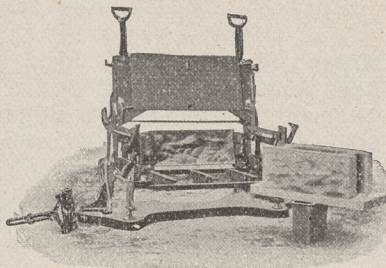
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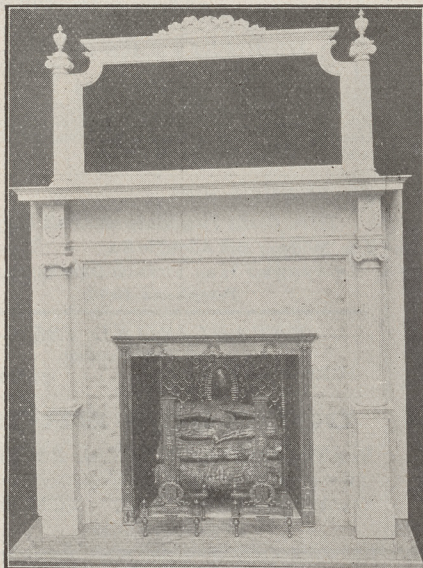


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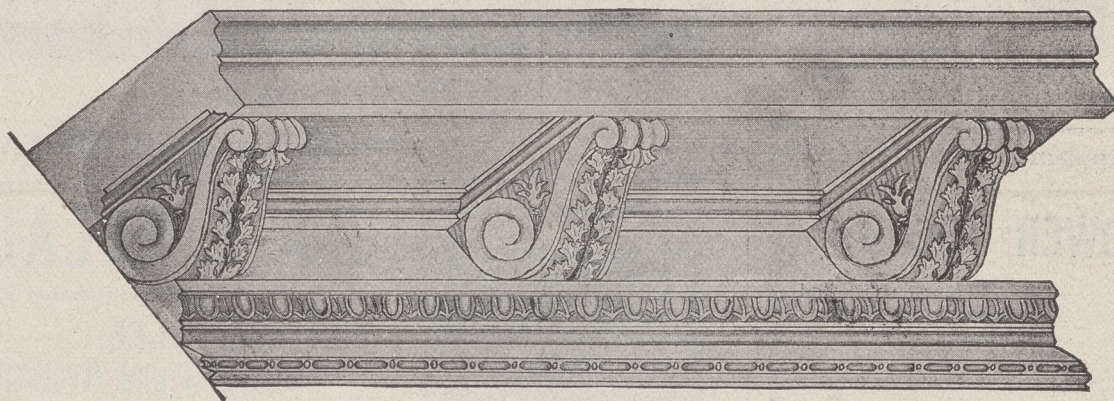
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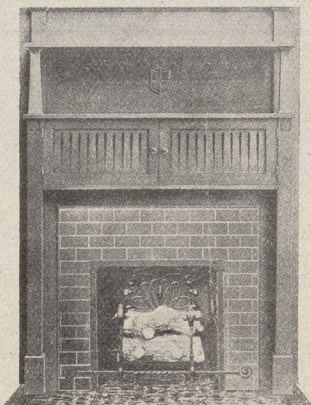
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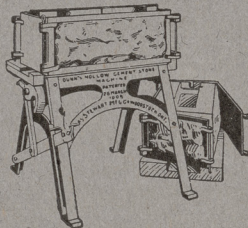
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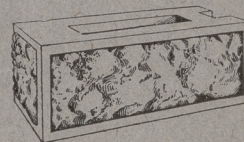
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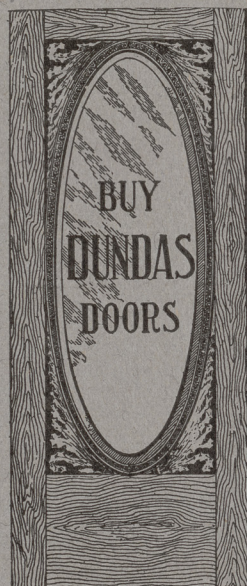
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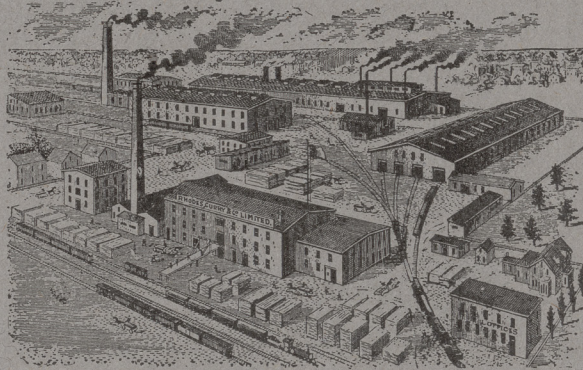
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